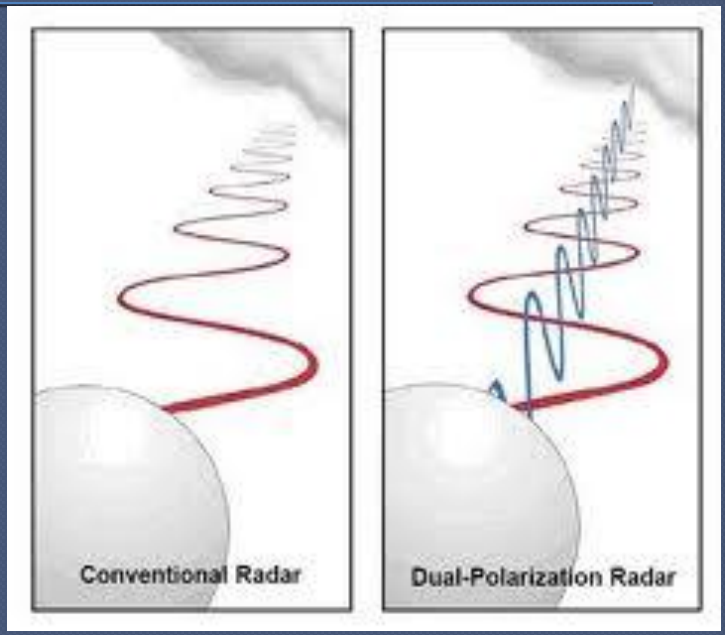
What's New at NWS Paducah!

Things have changed, so have we!

Pat Spoden

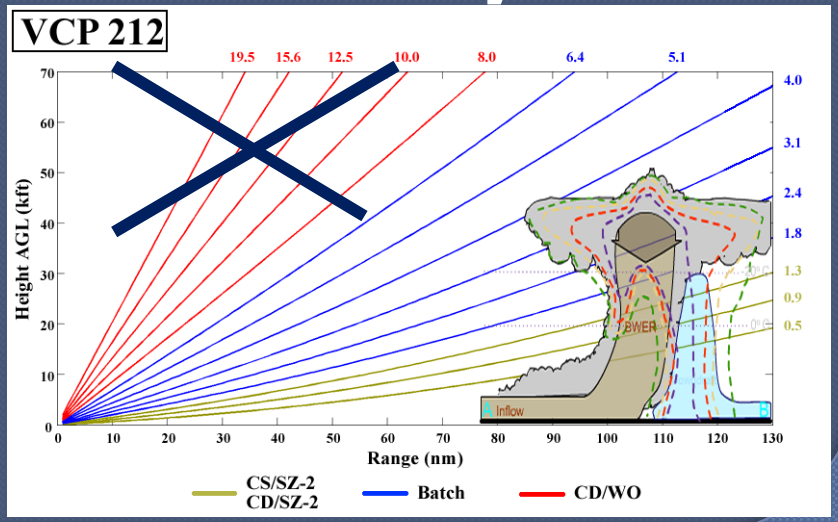
Dual Pol Schedule

- Memphis - Nov 2011
- Nashville - Jan 2012
- St. Louis - Feb 2012
- Indianapolis - Oct 2012
- Louisville - Nov 2012
- Paducah - Jan 2013
- Fort Campbell - Jan 2013
- Evansville - Feb 2013



Latest 88D Changes in a Nutshell

- Available *now*
- Desire for faster VCP updates
- Sampling above the weather?
  - Stop current volume scan & start a new one!
- AVSET makes each volume scan "dynamic"



How AVSET Works

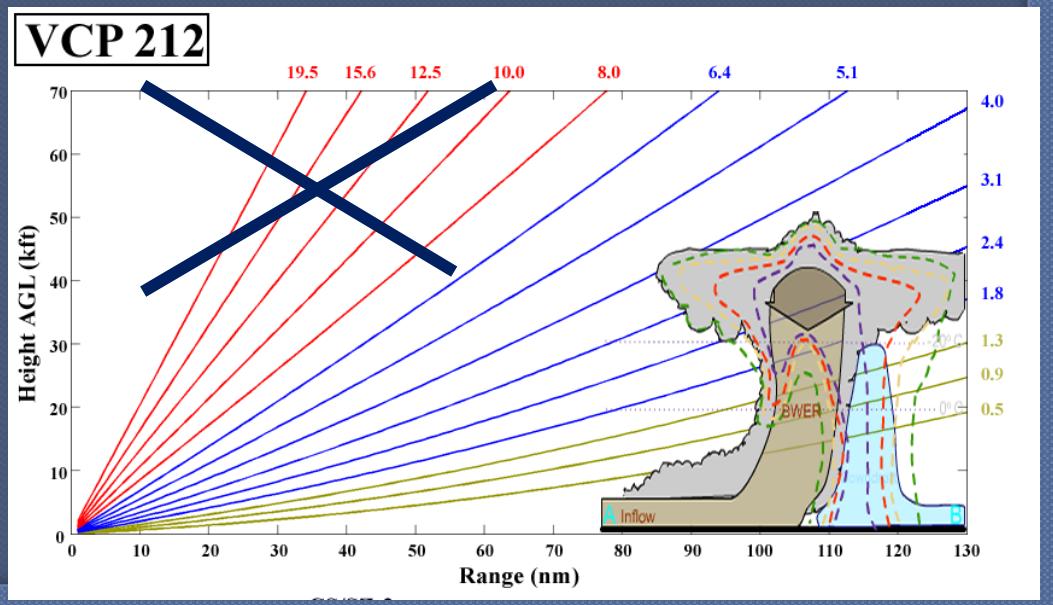
- Terminates volume scan once returns fall below thresholds of dBZ & areal coverage
  - Shortens time between products when no significant data exists on higher elevation tilts
  - Antenna rotation rates & base data quality ***do not change***!

How AVSET Works

- Only analyzes data ***above*** 5°
  - VCP 31 and 32 ***not*** impacted by AVSET
- To terminate, each condition ***must be met***:
  1. ≥18 dBZ over < 80 km²
  2. ≥ 30 dBZ over < 30 km²
  3. areal coverage ≥18 dBZ has ***not*** increased by 12 km² or more since the last volume scan

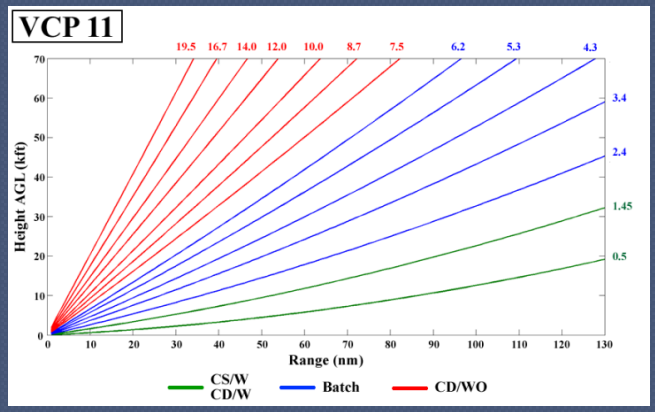
How AVSET Works

- All three conditions met…
  - AVSET terminates volume scan ***after*** completion of the ***next*** higher elevation
  - VCP 212: Below thresholds at 5.1, Terminate after 6.4°

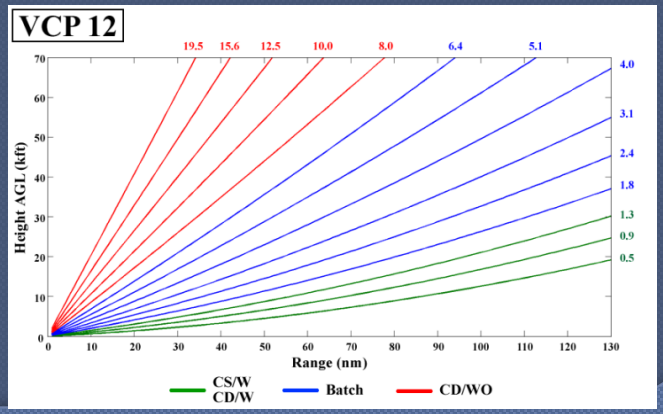


How Low Can We Go?

- VCP 11 full volume scan time 4 min, 48 sec
  - AVSET shortest update 3 min, 12 sec

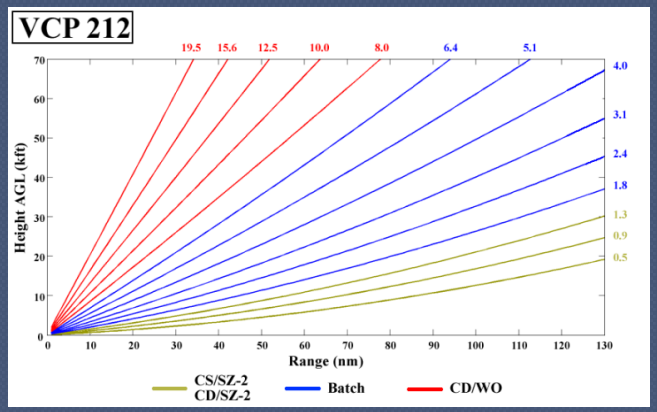


- VCP 12 full volume scan time 4 min, 18 sec
  - AVSET shortest update 3 min, 12 sec

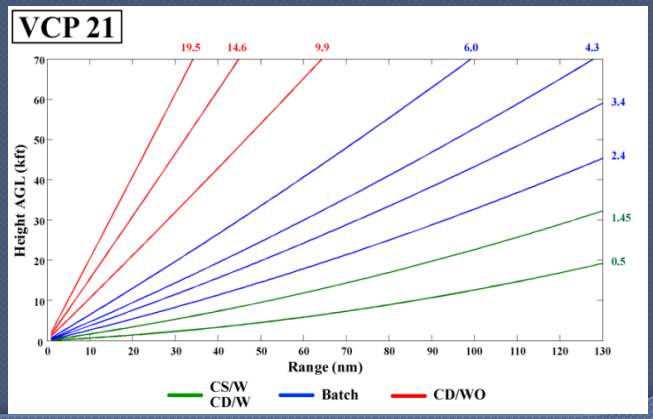


How Low Can We Go?

- VCP 212 full volume scan time 4 min, 36 sec
  - AVSET shortest update 3 min, 30 sec

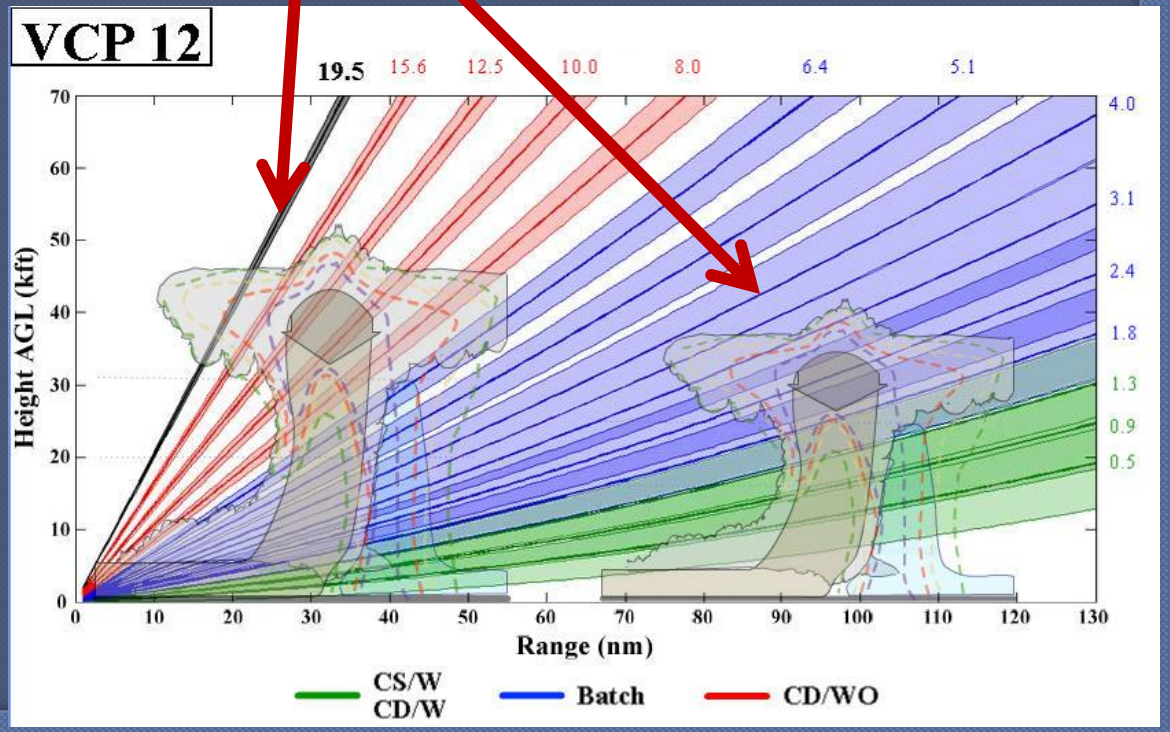


- VCP 21 full volume scan 5 min, 48 sec
  - AVSET shortest update 4 min, 54 sec



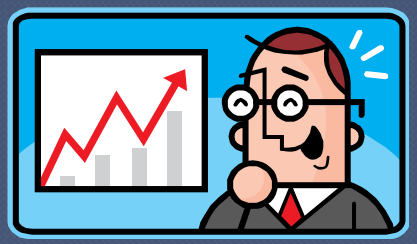
AVSET and Range to Weather

- AVSET with storms at close range
  - Entire VCP used
- AVSET with storms at far range
  - Only relevant elevations above 5° used



Forecasting Improvements

- **Using a program called BOIVerify, we now get daily verification scores.**
- **We now have about 27 types of guidance to choose from including:**
  - **Raw model data**
  - **Bias Corrected (last 7 days) model data**
  - **Averages of raw model data, BC data, MOS guidance**
  - **National guidance**



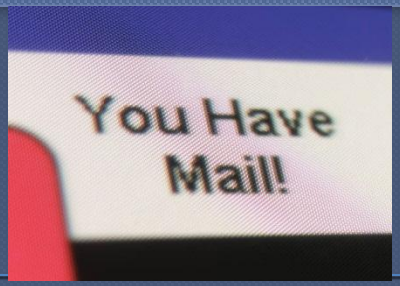
Period	Forecast	Made	Made by	Official MAE	Official Bias	Official Percent >10°; Err	Official Percent <3°; Err	Official Rank among Guidance	Best Guidance	2nd Best Guidance	3rd Best Guidance	Worst Guidance
1	13-hr Wed	6/15	mid	5.27	-5.27	0.0%	36.4%	6 out of 14	MOSGuide 72.7%	CONSMOS 72.7%	GFS40BC 54.5%	NAM80 18.2%
2	25-hr Tue	6/14	day	5.27	-5.27	0.0%	27.3%	13 out of 14	GFS40BC 54.5%	WModel 54.5%	BCCONSAll 54.5%	SREF 18.2%
3	37-hr Tue	6/14	mid	4.82	-4.82	0.0%	27.3%	5 out of 14	MOSGuide 45.5%	CONSMOS 45.5%	CONSAll 27.3%	GFS40 0.0%
4	49-hr Mon	6/13	day	4.73	-4.73	0.0%	27.3%	9 out of 14	MOSGuide 81.8%	CONSMOS 81.8%	WModel 36.4%	NAM80 9.1%
5	61-hr Mon	6/13	mid	4.91	-4.91	0.0%	27.3%	8 out of 14	MOSGuide 81.8%	CONSMOS 81.8%	GFS40BC 27.3%	NAM80 0.0%
6	73-hr Sun	6/12	day	5.00	-4.09	0.0%	36.4%	7 out of 15	MOSGuide 81.8%	CONSMOS 81.8%	WModel 72.7%	NAM80 0.0%
7	85-hr Sun	6/12	mid	3.55	-2.82	0.0%	54.5%	3 out of 11	ECMFHiRes 72.7%	MOSGuide 54.5%	CONSMOS 54.5%	DGEX 0.0%
8	97-hr Sat	6/11	day	3.55	-2.82	0.0%	54.5%	2 out of 12	MOSGuide 54.5%	CONSMOS 54.5%	GFS40BC 45.5%	DGEX 0.0%
9	109-hr Sat	6/11	mid	2.64	-1.00	0.0%	54.5%	8 out of 11	GFS40BC 81.8%	BCCONSAll 81.8%	MOSGuide 63.6%	CONSRaw 9.1%
10	121-hr Fri	6/10	day	2.64	-1.00	0.0%	54.5%	10 out of 12	CONSAll 72.7%	MOSGuide 63.6%	WModel 63.6%	BCCONSAll 45.5%
11	133-hr Fri	6/10	mid	3.09	-2.18	0.0%	63.6%	7 out of 11	ECMFHiRes 81.8%	CONSAll 72.7%	GFS40 72.7%	BCCONSAll 45.5%
12	145-hr Thu	6/ 9	day	3.09	-2.18	0.0%	63.6%	2 out of 12	ECMFHiRes 63.6%	HPCGuide 54.5%	MOSGuide 45.5%	DGEX 9.1%
13	157-hr Thu	6/ 9	mid	3.09	-2.18	0.0%	63.6%	1 out of 11	MOSGuide 45.5%	CONSMOS 45.5%	GFS40BC 36.4%	WModel 0.0%
14	169-hr Wed	6/ 8	day	2.73	-0.18	0.0%	63.6%	4 out of 12	MOSGuide 63.6%	CONSAll 63.6%	HPCGuide 63.6%	WModel 18.2%
15	181-hr Wed	6/ 8	mid	2.73	-0.18	0.0%	63.6%	4 out of 11	MOSGuide 63.6%	GFS40BC 63.6%	BCCONSAll 63.6%	GFS40 27.3%
16	193-hr								ECMFHiRes 63.6%	CONSAll 54.5%	CONSRaw 54.5%	BCCONSAll 45.5%

Best Guidance – Which guidance product did the best (not including you) and % of points it did well

2nd Best Guidance – Which one performed 2nd best

3rd Best Guidance – Which one performed 3rd best

Worst Guidance – Had the least percentage of points less than 3 degrees within the temps



Daily E-Mail

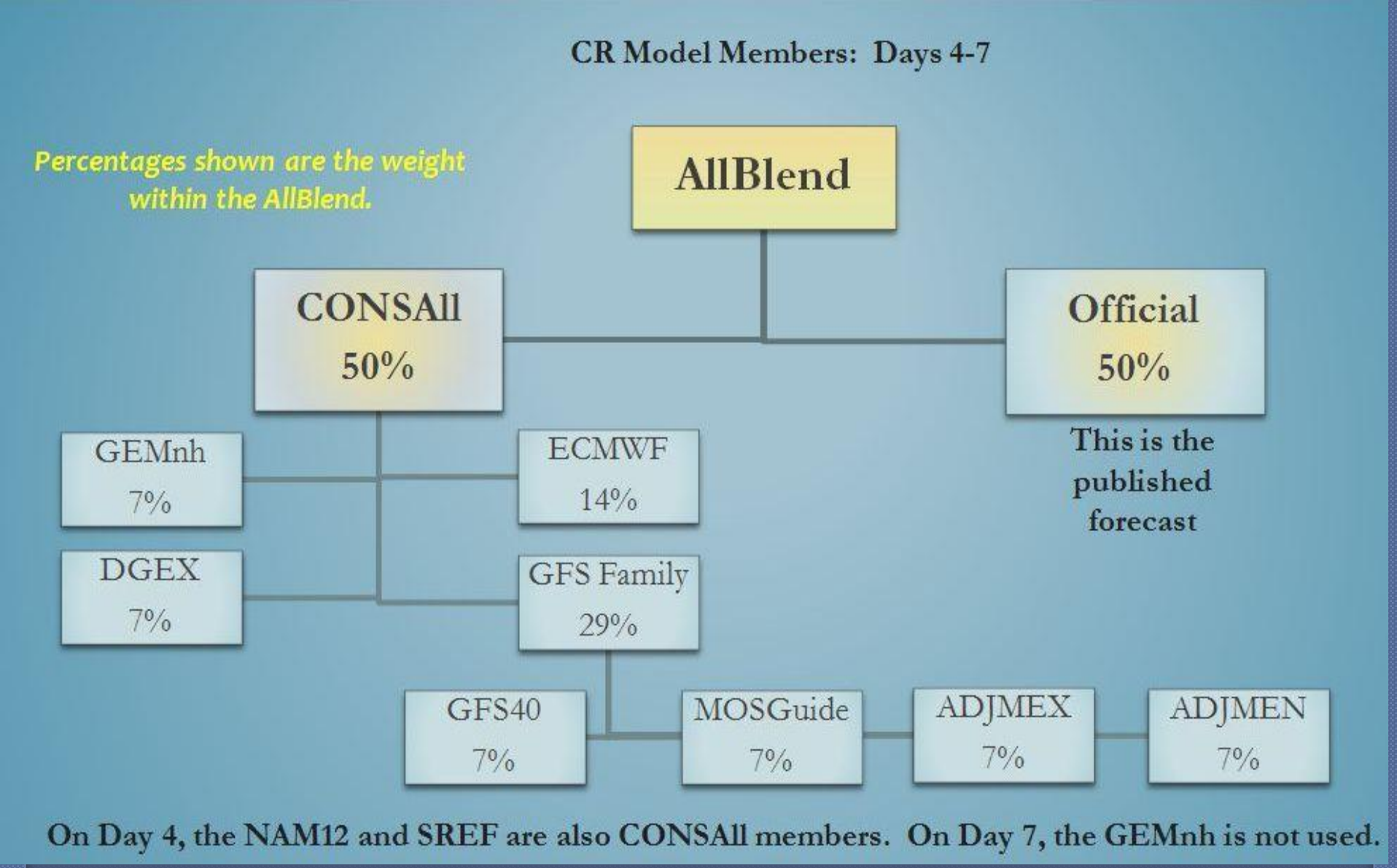
- **What can we do with this information?**
  - **Watch for trends in data**
  - **Look back on extremes (cold and warm) and determine which models performed the best**
    - **Normally raw model data**
  - **Look back on static weather regimes and determine which models performed the best**
    - **Normally average of guidance**

What Fields Can We Look At?

- Maximum and Minimum Temperature
- Dew Points
- Wind
- Relative Humidity
- Working on:
  - Probability of Precipitation (PoPs)
  - Sky

New Extended

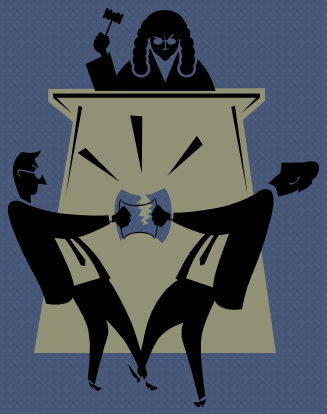
- **Previously, days 4-7 were worked on mostly during the morning hours and tweaked at night.**
- **Now, we load new data around Noon and again around Midnight**
  - **All offices (except Memphis and Nashville) do this**
  - **We then collaborate, and we make changes based on science. We cannot go out "on our own"**



Looks confusing doesn't it?

Issues

- When collaborating with other offices
  - They may not want to make a change
  - They may feel we do not have "skill" to make changes to some fields.
  - We have only been doing this since Oct 1.
    - It will take some time as adjustments are made



AWIP II

- No Schedule yet as to when we will get it
- Main change is to the internal architecture of AWIPS
- Initially only small changes for the forecaster
- However, the internal change will allow for greater advancements in the near future.

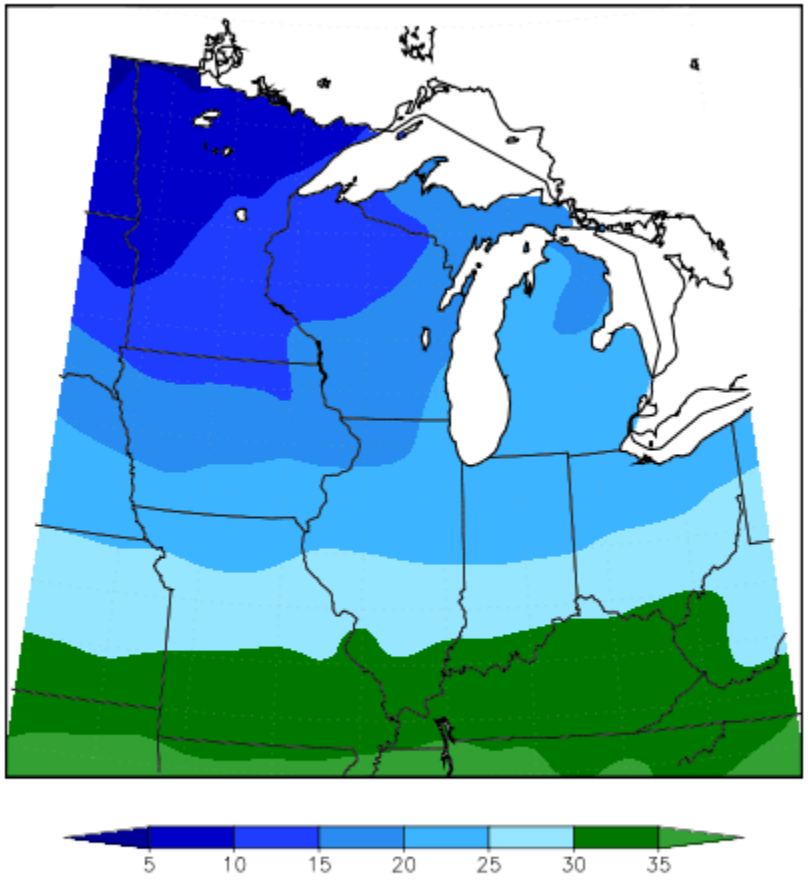
Outreach

- We have a FB page
  - Please "Like" us.
  - We have "Liked"
    - All EM pages we know about
    - All Universities
    - State Police
  - If you start a page, let us know
- Should start sending "Tweets" in December?

Winter Outlook

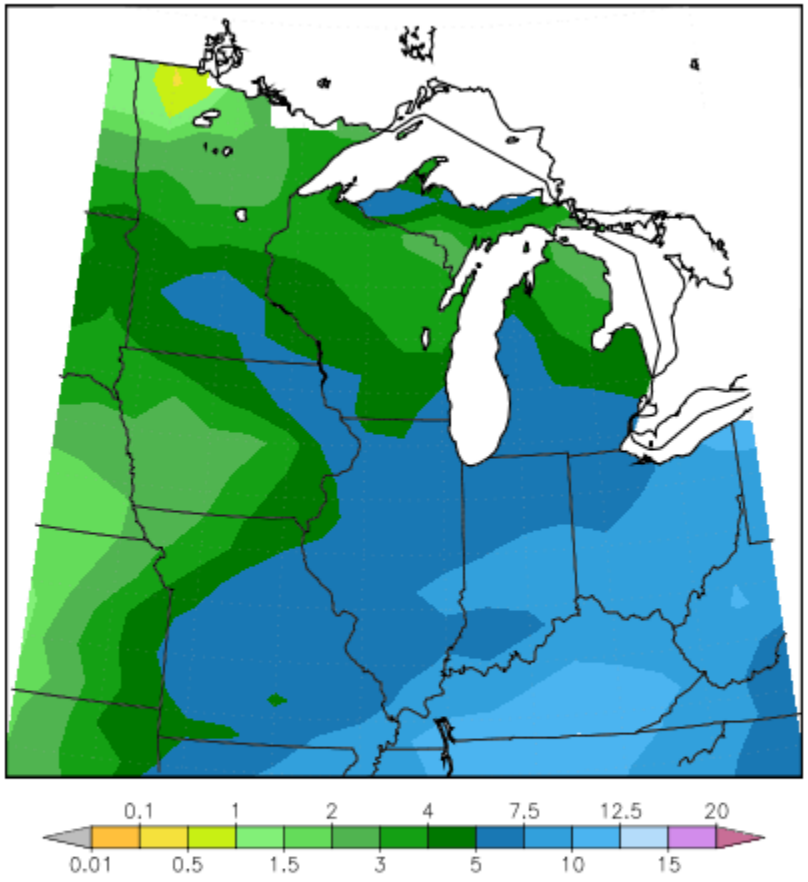
- Did you like what we had last winter and spring?
- GOOD
- We expect similar conditions this upcoming winter and spring (hopefully without the extremes)

Average Temperature (°F)
December 1, 2010 to February 28, 2011



Midwestern Regional Climate Center
Illinois State Water Survey
University of Illinois at Urbana-Champaign

Total Precipitation (inches)
December 1, 2010 to February 28, 2011



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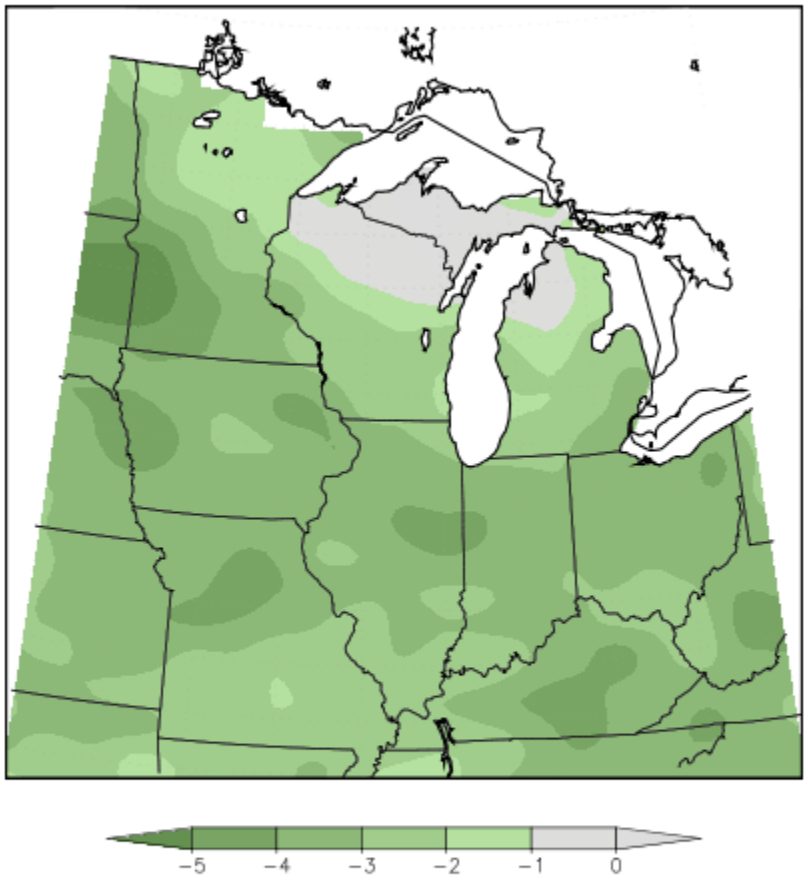
Average Temperature (°F): Departure from Mean
December 1, 2010 to February 28, 2011



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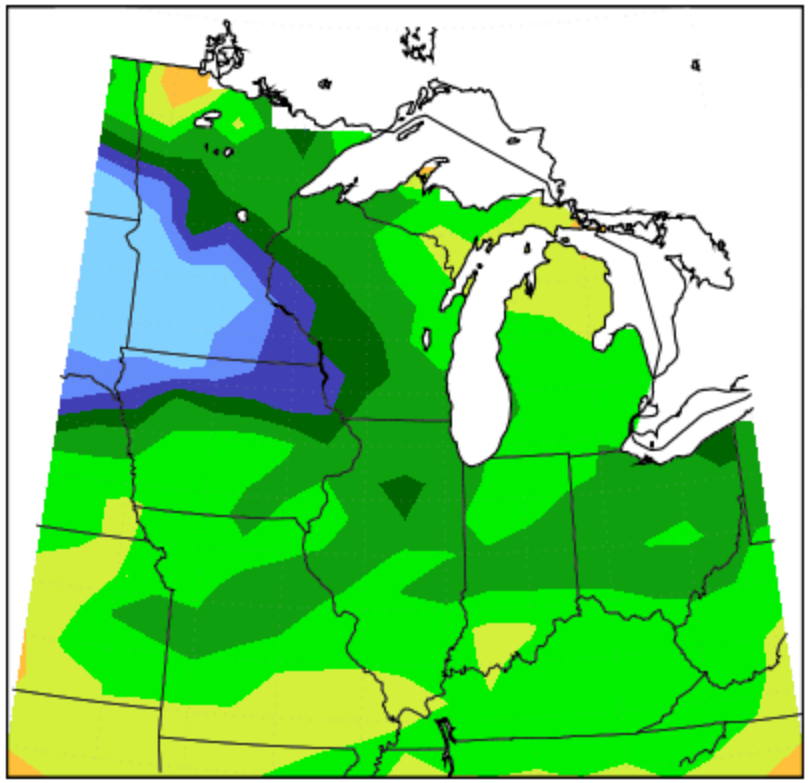
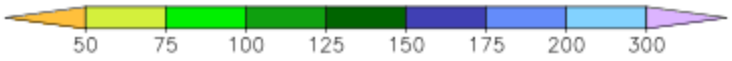
Total Precipitation: Percent of Mean
December 1, 2010 to February 28, 2011





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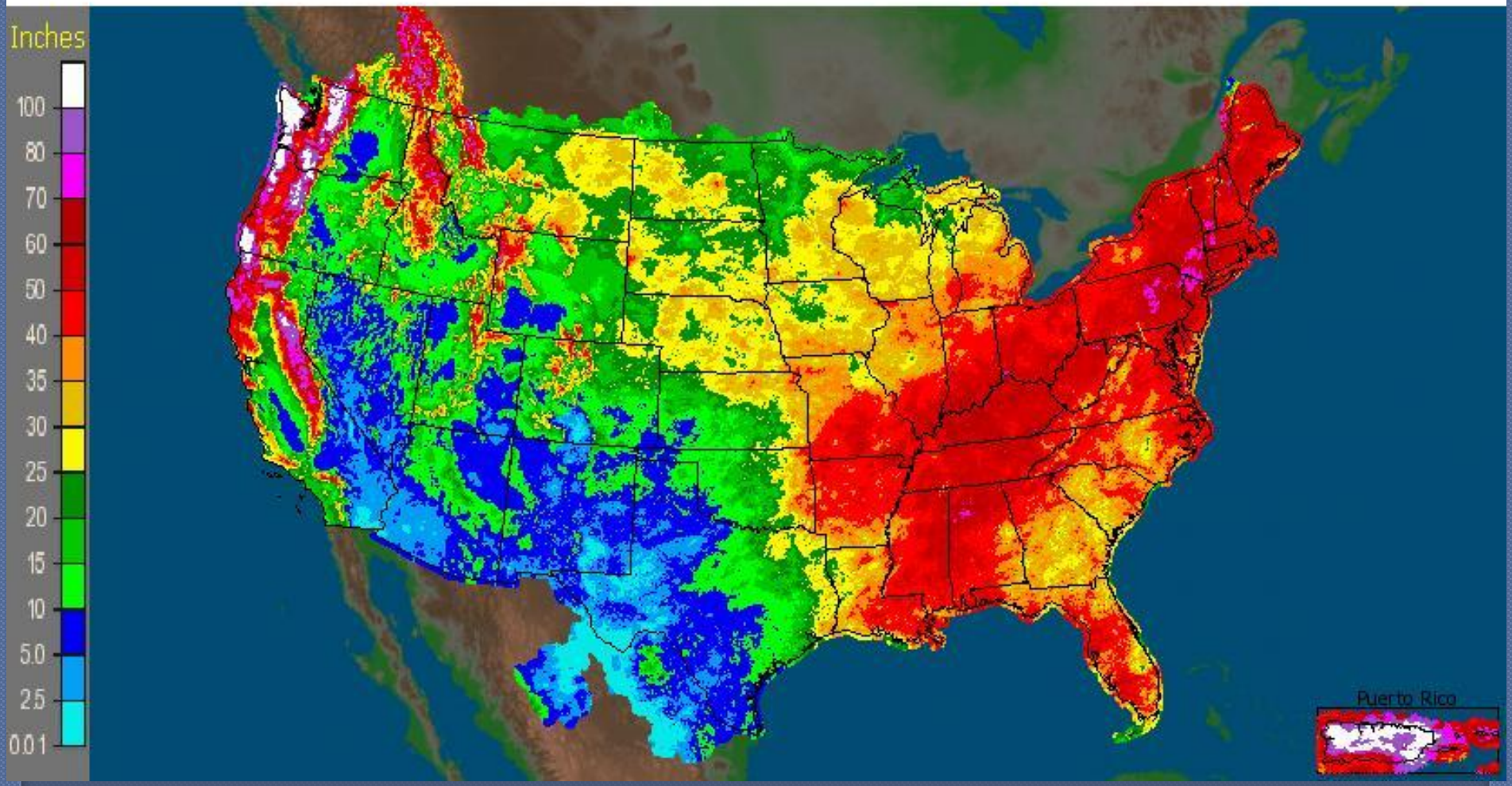
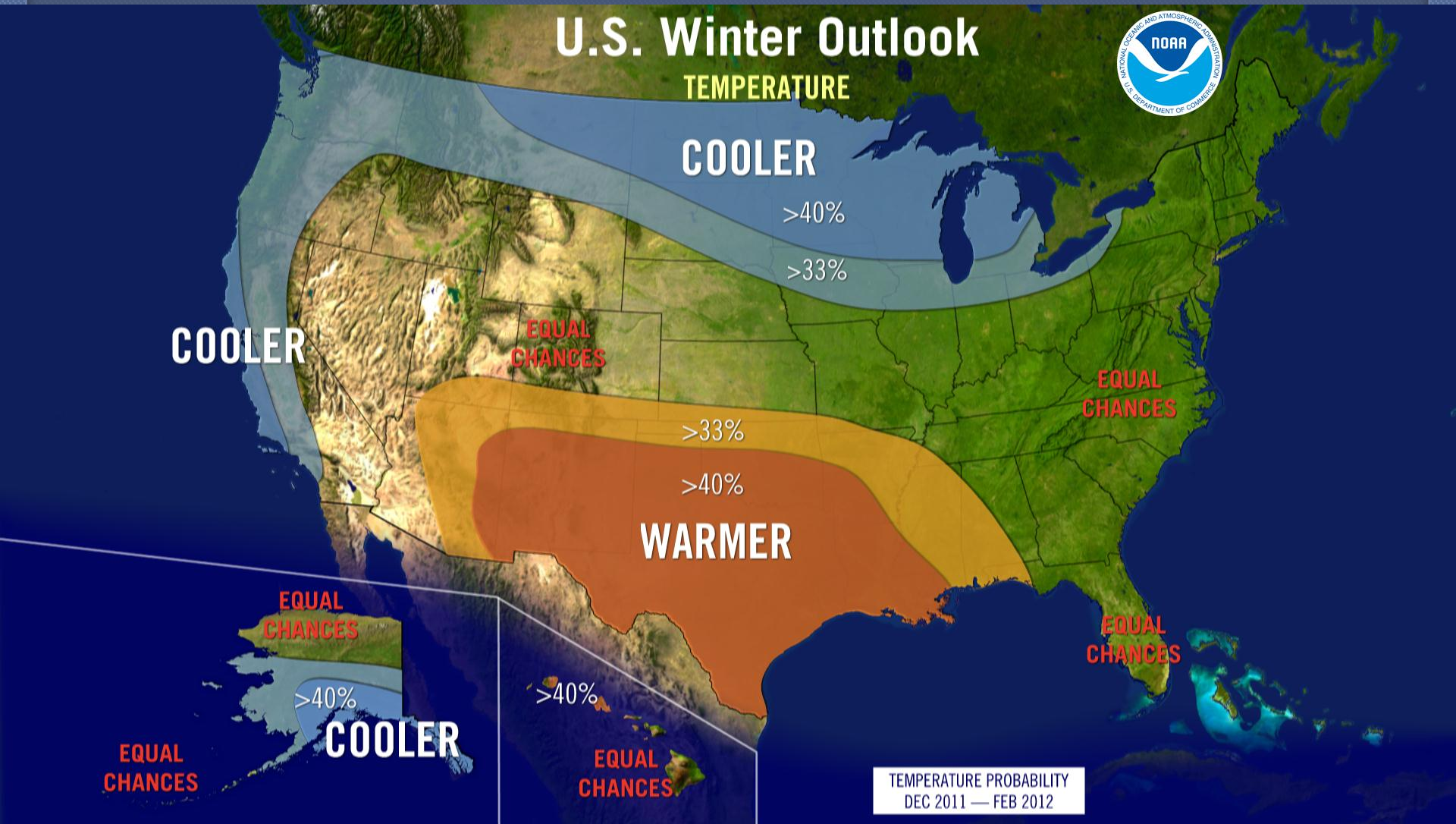
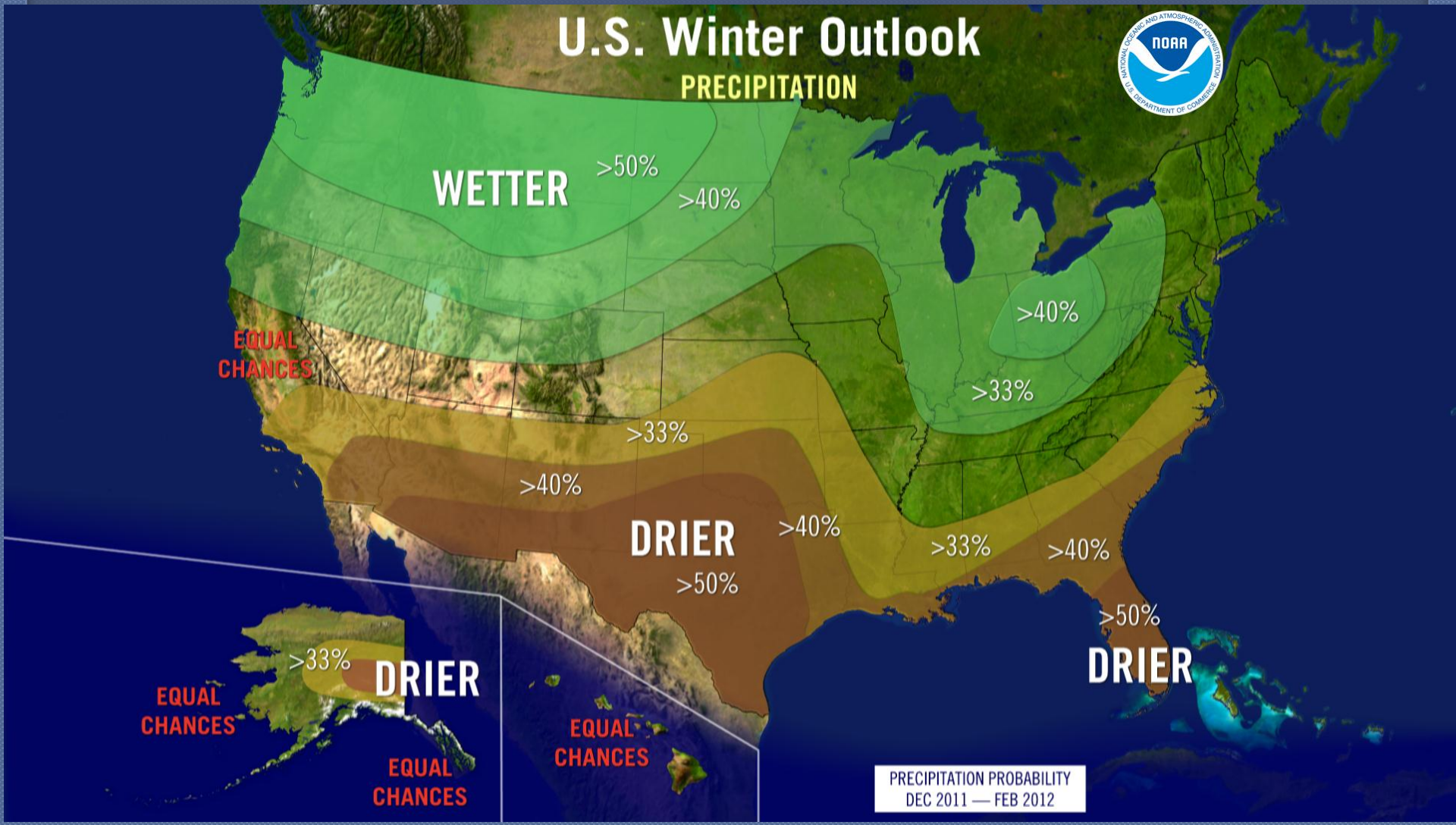
CONUS + Puerto Rico: 2011 Water Year, Observed Precipitation
Valid at 10/1/2011 1200 UTC- Created 10/3/11 21:34 UTC



Temperatures

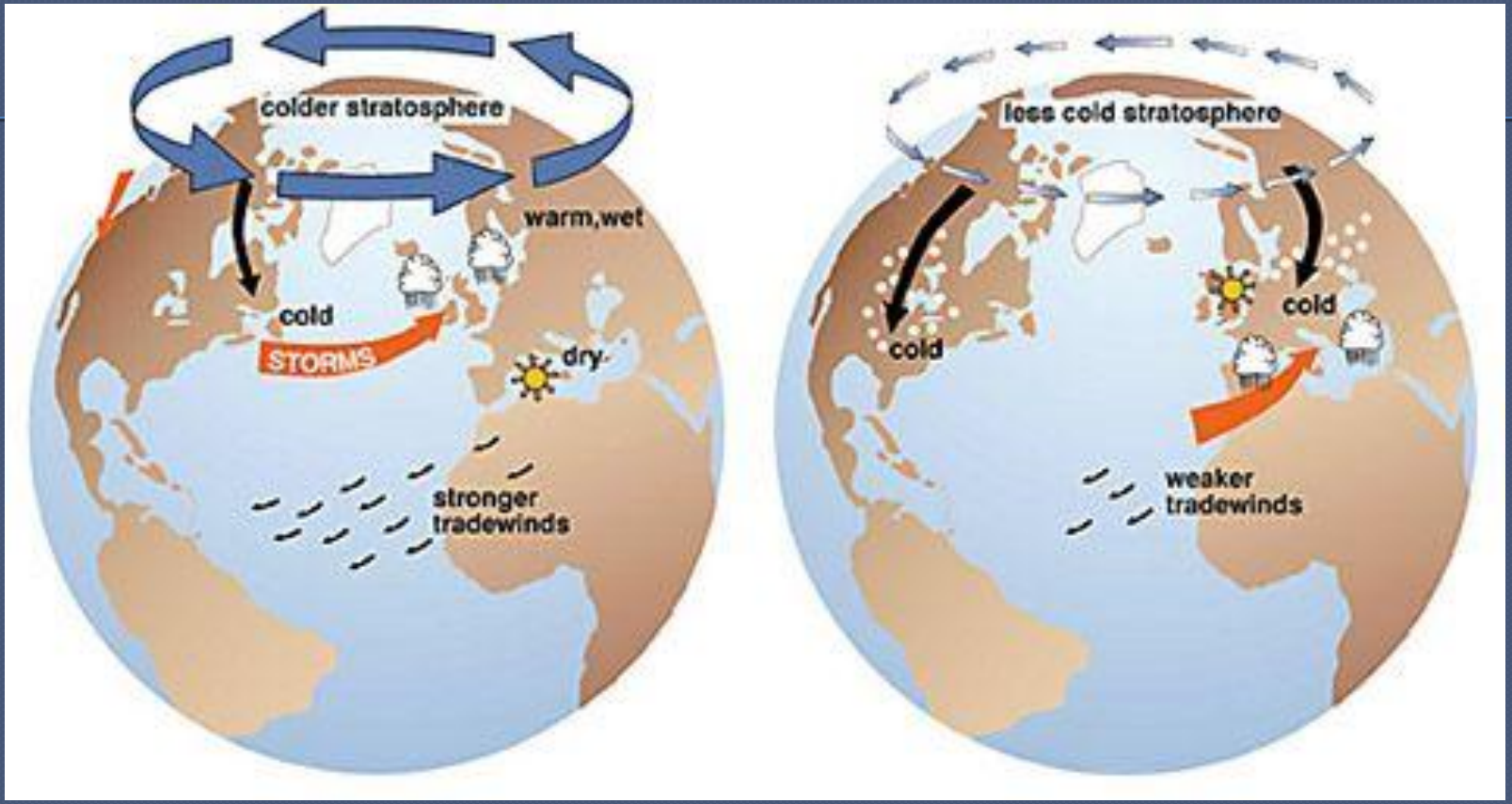


Precipitation



"Wildcard"

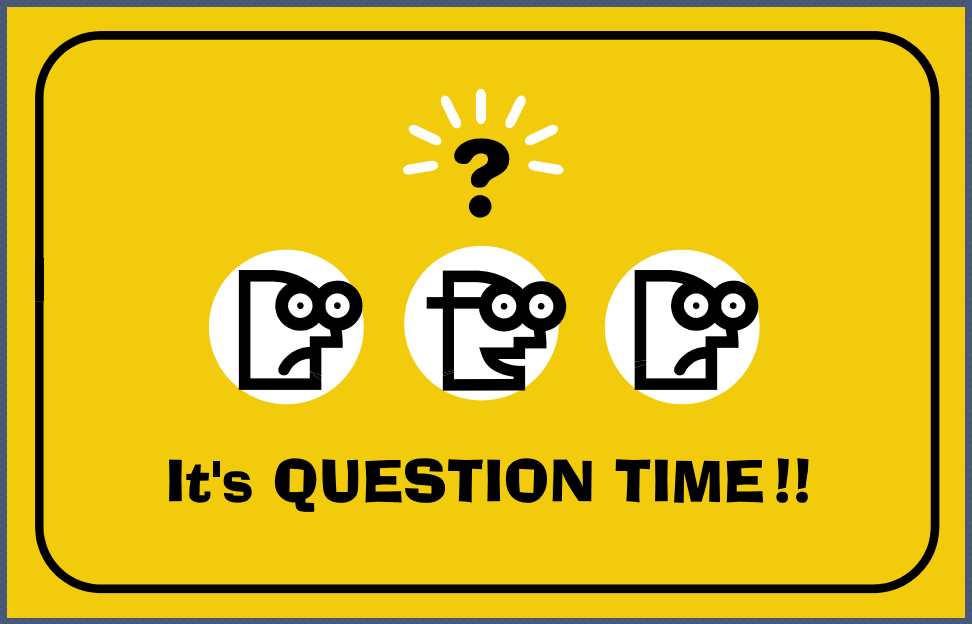
- Mentioned this last year…
- North Atlantic Oscillation
  - When a ridge builds (gets warm) over Greenland, the cold air backs up and spills down the east coast. (NEGATIVE)
  - When a trough builds (get cold) over Greenland, the warm air from La Nina will generally move over the southeastern U.S.



Effects of the ***Positive Phase*** of the Arctic Oscillation

Effects of the ***Negative Phase*** of the Arctic Oscillation

(Figures courtesy of J. Wallace, University of Washington)


It's QUESTION TIME!!